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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,285	06/01/2005	Masahiro Ozaki	272683US2XPCT	1849

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
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ALEXANDRIA, VA 22314

EXAMINER

FERNANDEZ, KATHERINE L

ART UNIT	PAPER NUMBER
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3768

NOTIFICATION DATE	DELIVERY MODE
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07/08/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/537,285	Applicant(s) OZAKI ET AL.	
	Examiner KATHERINE L. FERNANDEZ	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

1. Claims 5-6, 8, 12-13, and 19-20 are objected to because of the following informalities:

With regards to claims 5-6, 12-13, and 19-20, the corresponding independent claims have been amended to specifically disclose the type of images (i.e. X-ray CT image, simple X-ray radioscopic image) and therefore the limitations of claims 5-6, 12-13 and 19-20 that again define the type of image are redundant.

With regards to claim 8, in line 10, "size" should be "sick".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6 and 21-22, 29, 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Uppaluri et al. (US Patent No. 7,295,691).

Uppaluri et al. disclose a computer aided diagnostic system, comprising: a sick portion detecting device configured to detect a sick portion candidate based upon a simple X-ray image acquired by a first modality (column 7, lines 15-63; column 5, lines 34-37); and a correspondence displaying device configured to relate the position of the

detected sick portion candidate on an X-ray CT image acquired by a second modality different from the first modality and to display it (column 14, lines 6-22; column 9, lines 58-67; column 10, lines 20-50; column 4, lines 60-67); wherein the correspondence displaying device displays the X-ray CT image of an axial face corresponding to a position of a mark selected based upon the sick portion candidate displayed on the simple X-ray image (column 10, lines 1-19; column 14, lines 38-40).

Uppaluri et al. further disclose that their invention includes a second sick portion detecting device configured to detect a sick portion candidate based upon an X-ray CT image (or a plurality of X-ray CT images) related to the same region of interest of the same subject acquired by a second modality different from the first modality (column 14, lines 7-22; column 13, lines 15-17; column 7, lines 39-63); a detection results synthesizing device configured to compare the results of detection by the first and second sick portion detecting devices (column 7, lines 39-63) wherein the detection result synthesizing device compares positions of marks respectively selected based upon the sick portion candidates respectively displayed on the simple X-ray image and on the X-ray CT image of an axial face (column 8, line 32 -column 9, line 15; column 9, line 57-column 10, line 50). A correspondence display device can be configured to relate the position of a sick portion candidate detected by the first sick portion detecting device on an image analyzed by the second sick portion detecting device and to display it, as the same time, to relate the position of a sick portion candidate detected by the second sick portion detecting device on an image analyzed by the first sick portion detecting device and to display it (column 9, line 58-column 10, line 50). The

correspondence displaying device is configured to cause the mark displayed when the sick portion candidate is detected on only one image among the simple X-ray image and the X-ray CT image to be different from marks respectively displayed when the sick portion candidate is detected on both images (column 10, lines 1-18, lines 43-50).

4. Claims 7-8, 12, 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Wood et al. (US Patent No. 7,072,501).

With regards to claim 7 and 12, Wood et al. disclose a computer aided diagnostic system, comprising: a sick portion detecting device configured to detect a sick portion candidate based upon an X-ray CT image acquired by one modality (column 11, lines 10-39); an image transforming device configured to transform the image acquired by the modality (column 11, lines 33-36); and a correspondence displaying device configured to relate the position of the sick portion candidate detected by the sick portion detecting device on the transformed image and to display it (column 11, lines 10-55; see Figure 13), wherein the correspondence displaying device displays the transformed image corresponding to a position of a mark selected based upon the sick portion candidate displayed on the X-ray CT image of an axial face (column 11, lines 50-55; see Figure 13; column 7, line 55-column 8, line 3). As can be seen in Figure 13, the transformed image resembles a simple X-ray radiographic image (see Figure 13).

With regards to claims 8 and 13, Wood et al. disclose a computer aided diagnostic system, comprising: an image transforming device configured to transform an X-ray CT image acquired by one modality (column 11, lines 10-39); a sick portion detecting device configured to detect a sick portion candidate based upon the

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transformed image (column 11, lines 33-39, 50-55; column 7, lines 44-54; see Figure 13); a correspondence displaying device configured to relate the position of the sick portion candidate detected by the sick portion detecting device on the X-ray CT image acquired by the modality and to display it, wherein the correspondence displaying device displays the X-ray CT image of an axial face corresponding to a position of a mark selected based upon the sick portion candidate displayed on the transformed image (column 11, lines 10-39, column 7, line 44-column 8, line 3; column 6, line 61-column 7, line 12). As can be seen in Figure 13, the transformed image resembles a simple X-ray radiographic image.

Wood et al. further disclose that their invention includes a lesion navigator for selecting different computer or physician detected regions of interest in the acquired dataset or selecting a particular nodule for display in another display portion (column 6, lines 61-65). Navigating or scrolling through the selector automatically updates all axial and volumetric display viewports in which a computer or physician detected suspicious region of interest is located (column 6, line 61-column 7, line 12).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9-11, 14-18, 20, 24-28, 30-31 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uppaluri et al. in view of Wood et al.

As discussed above, Uppaluri meets most of the limitations of claim 9-11,14-18, 24-28, 30-31 and 33-34, including a first sick portion detecting device configured to detect a sick portion candidate based upon one image, such as an X-ray CT image or plural X-ray CT images, a second sick portion detecting device configured to detect a sick portion candidate based upon another image, and a detection result synthesizing device wherein the detection result synthesizing device compares positions of marks respectively selected based upon the sick portion candidates respectively displayed on the X-ray CT image of an axial face and on the other image. However, they do not specifically disclose that their system further comprises an image transforming device configured to transform the image acquired by the modality, and that the other image is the transformed image. They further do not specifically disclose that their system comprises an image reconfiguring device configured to reconfigure an image based upon stereoscopic image data including plural X-ray CT images acquired by the modality, and that the other image is the reconfigured image. Wood et al. disclose a system for displaying anatomical information automatically detected by computer algorithms (CAD), such anatomical information generated by tomographic scanning of the body (column 3, lines 58-63). They disclose that their system can display CT axial sections, and further that their system can generate a volumetric view from the series of two-dimensional CT section of an organ (i.e. transform/reconfigure the images acquired) (column 5, lines 53-67). The generated volumetric view (i.e. transformed/reconfigured image) makes it possible to visualize the overall structure of the region of the body being investigated (column 5, line 59-column 6, line 4). They further disclose that

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suspicious regions can be marked and identified on the different views (i.e. CT sections and volumetric view) (column 11, lines 10-39; see Figure 13). Wood et al. further disclose that their invention includes a lesion navigator for selecting different computer or physician detected regions of interest in the acquired dataset or selecting a particular nodule for display in another display portion (column 6, lines 61-65). Navigating or scrolling through the selector automatically updates all axial and volumetric display viewports in which a computer or physician detected suspicious region of interest is located (column 6, line 61-column 7, line 12). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the invention of Uppaluri et al. to have their system further comprise an image transforming device configured to transform the image acquired by the modality or an image reconfiguring device, as taught by Wood et al., as Wood et al. teach that a transformed/reconfigured view allows the physician to visualize the overall structure of the region being investigated, which can be beneficial when detecting and displaying sick portions (column 5, line 59-column 6, line 4).

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uppaluri et al. in view of Wood et al. as applied to claim 14 above, and further in view of Nabatame (US Patent No. 5,740,225).

As discussed above, the above combined references meet the limitations of claim 14. However, they do not specifically disclose that the image reconfiguring device generates a digitally reconstructed radiograph based upon the plural axial images. Nabatame discloses a radiation therapy planning method which accurately determines

an isocenter and a radiation field with the use of a digitally reconstructed radiograph (DRR) or translucent image, a system, and its apparatus (column 1, lines 8-12). They further disclose that their system involves acquiring a succession of axial images using a X-ray CT unit and includes a DRR developing unit for developing DRR of the subject viewed from a predetermined direction of radiation (column 5, lines 12-56). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have the image reconfiguring device of Gilhuijs et al. generate a digitally reconstructed radiograph based upon the plural axial images, as taught by Nabatome, in order to use the DRR in radiation therapy planning, as taught by Nabatome (column 1, lines 7-12).

Response to Arguments

Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHERINE L. FERNANDEZ whose telephone number is (571)272-1957. The examiner can normally be reached on 8:30-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric F Winakur/
Primary Examiner, Art Unit 3768

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